DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name:	**American Nickeloid Company**
Facility Address:	**129 Cherry St, Walnutport, PA 18088**
Facility EPA ID #:	**PAD 00 239 9285**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

X If yes - check here and continue with #2 below.

_____ If no - re-evaluate existing data, or

_____ If data are not available skip to #6 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Facility History

American Nickeloid Company began its operations at the Walnutport, PA location in 1923. The plant is mainly involved with sheet coil coating and finishing. Four continuous electroplating operations have been conducted at the plant including chrome, copper, nickel and brass. Each of the electroplating operations consists of a metal cleaning/rinsing operation, a plating tank, and a treatment system for the electroplating wastes that are generated.

EPA issued an Administrative Order (USEPA Docket No. RCRA-III-060-CA) to American Nickeloid Company on April 8, 1993 that ordered the company to address the contamination found in soils and groundwater beneath a surface impoundment area located north of the plant building and chrome plating area located within the plant building, as well as the soils and groundwater located in the area of a former naphtha storage tank. These areas are briefly discussed below.

American Nickeloid started its chromium electroplating operations in the 1930s. Over the years, the tanks, pipes and pumps associated with the chromium electroplating processes are known to have leaked. Often the leaks would find their way onto the floor or under the tanks. Cracks in the floor would allow the leaking chromium bearing materials to reach the soils beneath the concrete and eventually reach the groundwater flowing beneath the plant. There are other records of chrome solution spills within the plant that likely contributed to the contamination of the soils and groundwater beneath the building. In 1975, American Nickeloid replaced its four plating tanks and installed new equipment lined with a synthetic material, resistant to chromic acid degradation. Other upgrades to reduce the possibility of chromium electroplating solutions contaminating the soils and groundwater beneath the building were also instituted at that time.

Prior to 1986, treated waste from the facility's chrome-nickel neutralization tank and the copper/cyanide holding tank was pumped into surface impoundments located north of the plant area. A total of four surface impoundments covering an area of approximately 1.5 acres was used by the facility. Three of the surface impoundments were unlined and were used until 1972. The fourth impoundment was installed with a butyl rubber liner in 1972 and was taken out of service in 1985. Effluent from the surface impoundments was discharged into the Lehigh River under a National Pollutant Discharge Elimination System (NPDES) permit. Sludges from the surface impoundments and various treatment/storage tanks were routinely disposed of at approved treatment, storage and disposal (TSD) facilities. The use of the surface impoundments was no longer necessary when they were replaced by a series of treatment tanks, where the electroplating wastes are chlorinated and neutralized, and the copper and zinc are recovered. Contaminated soils and sludges were removed from the no longer used impoundments in 1985 and 1986 and sent off-site for disposal.

From roughly 1970 to 1980, an approximately 275 gallon tank containing naphtha, a degreasing solvent, was located just west of the plant building about 250 feet north of the chromium electroplating area within the building. The tank had a dispenser on it which workers commonly used to dispense naphtha directly into buckets to clean various parts. Any leakage from the dispenser would fall directly on the ground, as the tank did not have any secondary containment. This tank was moved inside the plant in 1980.

Other historical areas of concern at the facility include the following:

- **American Nickeloid utilized an area between the plant and surface impoundments to burn paints, organic solvents and wooden pallets. There are no official records that document the amount of waste burned in this area, but facility personnel estimated that less than 55 gallons of waste per day was combusted. An outside contractor removed the visibly contaminated soil from the site in 1982. The paint waste site was covered with soil and revegetated after a PADEP inspection.**

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- **American Nickeloid utilizes an area (10 by 50 foot concrete pad) at the southeast corner of the plant building for less than 90 day storage of drums of paint and solvent wastes. Waste solvents stored in this area include ethyl acetate and methyl ethyl ketone.**

- **A 20,000-gallon No. 6 fuel oil tank was excavated and removed from the property in January 1991. An inspection of the sumps at the time of excavation indicated that the southern sump had leaked and was the source of staining visible in the fill around the wall. The visibly stained soil was removed and eventually disposed of as non-hazardous.**

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"** [1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			**Chromium and Nickel have been detected at concentrations above the MCL in groundwater beneath the surface impoundments and plant building.**
Air (indoors) [2]		X		VOC contamination has not been documented at concentrations high enough to pose a threat to indoor air quality.
Surface Soil (e.g., <2 ft)	X			**Chromium has been detected in soils in the surface impoundments and adjacent to a swale at concentrations greater than EPA's RBC for residential soil. Dibenzo(a,h)anthracene and benzo(a)anthracene were detected in a single sample collected from the drum storage area above the RBC for residential soil.**
Surface Water		X		No contaminants were detected significantly above background concentrations or in excess of the MCL in samples collected from the Lehigh Canal as part of a Phase II RFI. No impact on the Lehigh River from site-related contamination is expected.
Sediment	X			**Chromium, nickel and copper were found in sediment samples collected from the Lehigh Canal at concentrations above EPA's sediment screening values for those constituents.**
Subsurf. Soil (e.g., >2 ft)	X			**Subsurface soil samples collected at the surface impoundment area and chrome plating area of the plant building were found to contain chromium at concentrations greater that the EPA RBC for residential soils.**
Air (outdoors)		X		No evidence of a release of contaminants to air.

___ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

___ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): See the following pages:

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Groundwater:

Several monitoring wells have been installed around the surface impoundments and plant building area. Additionally, numerous piezometers and two sumps have been installed inside the plant in the area housing the chromium electroplating operation. Many of these wells and piezometers are sampled either quarterly or annually based on an EPA approved sampling schedule. Below is a discussion of the data associated with the latest available sampling results. The data are fairly representative of the water quality at the facility for the past several years.

The latest available data (associated with a May 30, 2002 sampling event) indicate that groundwater concentrations of chromium in the surface impoundment area wells ranged from 0.007 mg/l to 1.815 mg/l. Groundwater concentrations of chromium in the plant area ranged from 0.007 mg/l to 2,075 mg/l. It should be noted that the highest concentration of chromium detected outside of the plant building was 0.664 mg/l and that the facility's NPDES Permit (No. PA0011762) has an average concentration limit of 1.71 mg/l. The maximum contaminant level (MCL) for chromium in groundwater is 0.1 mg/l.

Copper and nickel concentrations contained in the groundwater are also analyzed per the sampling schedule. All of the samples analyzed in the latest round of groundwater sampling (May 2002) were below the maximum contaminant level goal (MCLG) of 1.3 mg/l for copper. Groundwater concentrations of nickel in the surface impoundment area wells ranged from nondetect (<0.015 mg/l) to 0.291 mg/l. Groundwater concentrations of nickel in the plant area ranged from nondetect to 5.87 mg/l. EPA's risk based concentration (RBC) for nickel in tap water is 0.73 mg/l (EPA's MCL of 0.1 mg/l for Nickel was remanded on February 9, 1995). PADEP's medium-specific concentration (MSC) for nickel in a residential used aquifer with total dissolved solids less than 2,500 mg/l is currently 0.1 mg/l for Nickel.

Four wells in the former Naptha Storage Area were sampled in May 2002 and analyzed for benzene, ethyl benzene, toluene and xylene. These substances were not detected in groundwater collected from three of the wells. Ethylbenzene (0.002 mg/l) and xylene (0.66 mg/l) were detected in MW-6S, but these concentrations are below the respective MCLs for ethylbenzene and xylene of 0.7 mg/l and 10 mg/l.

Surface and Subsurface Soil:

The Phase II RCRA Facility Investigation (RFI), completed in September 1991, included the collection of 12 surface soil samples within and adjacent to a drainage swale located in the western portion of a wooded area between the plant and surface impoundments. The samples were analyzed for total chromium, copper, nickel and zinc. The results indicate that none of the samples contained constituent concentrations in excess of the respective RBCs for industrial soils. Chromium, at sampling locations SD-1A (790 mg/kg), SD-2 (315 mg/kg), and SD-3 (418 mg/kg) was in excess of the RBC for hexavalent chromium in residential soil (230 mg/kg).

As part of the Phase II RFI, on May 9, 1991, four surface/subsurface soil samples were collected from locations adjacent to the waste pipeline that transferred wastewater from the plant to the surface impoundments. The samples were analyzed for chromium, copper, nickel and zinc. None of the samples contained concentrations of these constituents in excess of EPA's RBC levels for residential soils.

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The Phase II RFI also included the installation and soil sampling of six borings in the surface impoundment area and one background location. A total of 28 soil samples were collected and analyzed for total metals from the six borings at various depths. The highest concentration of total chromium (2,045 mg/kg) was found in a surface soil sample collected at soil boring location B-14. EPA's RBC for industrial soil is 6,100 mg/kg for hexavalent chromium. One other surface soil sample (B-11) had a chromium concentration (240 mg/kg) in excess of the residential soil RBC. Elevated concentrations of total chromium in subsurface soils ranging from 239 mg/kg to 424 mg/kg were found in three of the six borings installed in the impoundment area. None of the other metals analyzed were found at concentrations in excess of EPA's residential soil RBCs for any of the samples collected in the surface impoundment area during the Phase II RFI.

Soil samples were collected at 12 inch intervals during the installation of two recovery sumps in the chrome plating area of the plant building in August 1997. Recovery Sump One exhibited the most contaminated soils, with the highest concentrations of chromium detected in the upper four feet. Concentrations of total chromium ranged from 22,600 mg/kg to 42,200 mg/kg and hexavalent chromium concentrations ranged from 9,700 mg/kg to 19,250 mg/kg in the same depth range. These values are above the EPA RBC for hexavalent chromium in industrial soils (6,100 mg/kg).

A soil gas survey which resulted in the collection of three soil samples (including one background) in the former paint waste area was part of the Phase II RFI. The highest organic vapor analyzer (OVA) reading during the soil gas survey was 28 ppm. Soil sample locations were based on the soil gas survey results. The only organic contaminant found in the samples collected within the paint waste area was diethylphthalate (0.048 mg/kg). This is well below EPA's RBC for residential soil (780,000 mg/kg).

Another soil gas survey was completed in the former outdoor naphtha storage tank area as part of the Phase II RFI. Soil was collected from two surface and two subsurface locations as a result of the survey and analyzed for volatile and semi-volatile organic compounds. Very low levels (several orders of magnitude below the associated RBCs) of a handful of VOCs and semi-VOCs were found in two of the samples. None of the contaminants were detected at concentrations above EPA's RBCs for residential soil.

A third soil gas survey was completed in the vicinity of the drum storage area located in the southeast corner of the plant building. The soil gas survey indicated VOC readings as high as 140 ppm on the OVA. Three soil samples, including one background sample, were collected and analyzed for VOCs and semi-VOC's based on the results of the soil survey. Toluene was found at a trace concentration of 0.01 mg/kg in one of the soil samples, but this concentration is significantly below EPA's RBC for residential soils of 16,000 mg/kg. Several semi-VOCs were identified at trace concentrations in the soil samples, all of which were at concentrations less than the corresponding RBC for residential soils with the exception of dibenzo(a,h)anthracene (0.42 mg/kg) and benzo(a)anthracene (1.8 mg/kg). These two compounds were found at concentrations less than EPA's RBC for industrial soils.

After removing the visibly contaminated soils from the former 20,000-gallon No. 6 fuel oil underground storage tank (UST) location in 1991, four soil samples were collected and analyzed for total petroleum hydrocarbons and total benzene, toluene, ethyl benzene and xylene (BTEX). No BTEX compounds were detected and the maximum TPH concentration was 100 mg/kg. A recovery system consisting of two monitoring/recovery wells, a containment system, and a third monitoring well was installed to monitor groundwater quality in this area. Weekly analyses of groundwater for oil and grease from the three wells from January 1991 through July 1992 indicated that oil and grease levels had fallen from a maximum of 683 mg/l to trace concentrations of less than 0.5 mg/l in that time period.

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Surface Water:

Surface water runoff around the plant area flows into storm water drains that empty into the Lehigh River. The Lehigh Canal is situated between the facility and the Lehigh River. A surface water drainage pathway exists on the southern side of the former surface impoundments which may also serve as a discharge point for groundwater from the impoundments. During storm events, the drainage swale located in the western portion of the wooded area discharges into a drainage ditch along a railroad right-of-way and eventually into the Lehigh River. Groundwater flow direction based on historic groundwater elevations is generally to the west toward the river. Based on monitoring well water levels, on-site groundwater generally underflows the canal and discharges to the Lehigh River.

On June 20, 1990, as part of the Phase II RFI, surface water samples were collected from four locations along the eastern side of the Lehigh Canal in the vicinity of the surface impoundments. The samples were analyzed for total metals. Only trace concentrations of chromium and zinc, well below the EPA RBCs, for tap water were detected in the samples.

There are no records of any sampling events on the Lehigh River associated with the American Nickeloid facility in the site files. The groundwater discharging from the facility to the Lehigh River is not expected to have a significant impact on the river due to the size, and therefore diluting effect, of the water body.

Sediment:

Sediment samples were collected at the same time and from the same four locations as the surface water samples in the Lehigh Canal. The concentration of total chromium at sample location CS-2 (583 mg/kg) was significantly higher than the chromium concentration in background sample CS-1 (9.5 mg/kg). It should be noted that both of these values were quantitative estimates made by the laboratory. The copper concentration in the sample collected at CS-2 (2040 mg/kg) was also significantly greater than the background concentration of 386 mg/l. Nickel, which was undetected at the background location (CS-1) was found at a concentration of 282 mg/kg at CS-2. The concentrations of chromium, copper and nickel in the sediment of the Lehigh Canal are all greater than EPA's Office of Solid Waste and Emergency Response's (OSWER's) sediment screening values for those constituents.

Air (indoor)

No residences are located downgradient of any source areas at the facility. Diethylphthalate, the only VOC found in the paint waste area, is not a contaminant of concern for the indoor air pathway, even when using the most conservative estimates, according to EPA's draft Supplemental Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway. Toluene, the only VOC found in the drum storage area, was detected at a concentration more than three orders of magnitude below PADEP's soil screening criteria for volatilization of toluene from soil to indoor air (74.2 mg/kg). The major concern of contamination at the facility is the metals contamination of the soils and groundwater beneath the site, which does not contribute to an indoor air quality problem.

Air (Outdoor)

A release of contaminants from source areas to the air above a risk-based level is not suspected. A baseline risk assessment completed as part of the Phase II RFI concluded that the risks associated with inhalation of contaminants contained in air releases from the facility are acceptable based on the available data. The baseline risk assessment also made the following assumptions:

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- **Inhalation by on-site workers and nearby residents of fugitive dust and volatiles released from on-site soils and groundwater is limited by the coarse soils and boulders present in most areas of potential concern.**
- **The opportunity for contact with site soils by casual trespassers is limited because the entire site, including the surface impoundment area, is fenced.**
- **Screening calculation were based on the nearest resident living within 100 meters of each solid waste management unit (SWMU), when, in fact, the nearest residents are located more than 200 meters from the surface impoundments.**

Ref.: **Phase II RCRA Facility Investigation Draft Report for the American Nickeloid Company, Prepared by Environmental Resources Management, Inc., 9/18/91; Administrative Order, USEPA Docket No. RCRA-III-060-CA, April 8, 1993; Quarterly Status Reports Required by EPA's Administrative Order, 1993 through 2002; Final Design for the Corrective Measures Implementation at the American Nickeloid Company, Working Document, prepared by Laurie Shields, American Nickeloid, and Dr. Robert Nelson, Illinois State University, September 1996; Correspondence from Cocciardi and Associates, Inc. to Mr. William Cline, American Nickeloid Company, Excavation of Sump Installation, September 10, 1997; Proposed Corrective Measures Alternative for the Former Naphtha Storage Tank Area at American Nickeloid Company, prepared by Laurie Shields, American Nickeloid, and Dr. Robert Nelson, Illinois State University, November 1998; Comprehensive Groundwater Monitoring Evaluation for American Nickeloid Company, prepared by Lisa Hannigan, PADEP, September 1999; Supplemental Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway, Draft for Comment, USEPA, 10/23/2001; Vapor Intrusion into Buildings from Groundwater and Soil under PA Act 2 Statewide Health Standard, PADEP, 2/15/2002.**

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	No			No
~~Air (indoors)~~	___	___	___				
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
~~Surface Water~~	___	___			___	___	___
Sediment	No	No			No	No	No
Soil (subsurface e.g., >2 ft)				No			No
~~Air (outdoors)~~	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

X If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

___ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

___ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): See the following pages:

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Groundwater:

American Nickeloid Company has been under a RCRA Administrative Order since 1993 to address groundwater contamination at the Walnutport, PA facility. A groundwater recovery and treatment program has existed at the surface impoundment area since the last of the impoundments went out of service in 1985. The Administrative Order continues to provide EPA/PADEP with oversight responsibilities for recovery and treatment of groundwater from not only the surface impoundment area, but from the chrome plating area within the plant building as well. American Nickeloid Company treats groundwater from the surface impoundment and chrome plating areas to remove chromium and other metals using an ion exchange process. To assist in the groundwater recovery efforts in the plant, two shallow recovery sumps were installed in the chrome plating area of the plant building in August 1997. Chromium contaminated groundwater from these sumps, as well as from a few of the piezometers within the building is collected and sent for on-site treatment. The treated groundwater is used for plant processes or is discharged to the Lehigh River via an NPDES permit.

Per the Administrative Order, the groundwater recovery and treatment operation will continue until certain Cleanup Goals and Points of Compliance are met for a period of up to six years (monitoring of wells every two years following total discontinuation of groundwater extraction and three consecutive sampling results indicating levels that do not require further action).

Off-site migration of groundwater contamination has been largely controlled by the recovery system in place. Concentrations of total chromium detected in well B-2, located just outside the northwest corner of the surface impoundment area, have increased from the 400 mg/l - 600 mg/l range to the 600 mg/l to 1,000 mg/l range over the past decade of routine quarterly monitoring. In correspondence dated September 16, 2002, PADEP directed American Nickeloid to proceed with the long-term test pumping of Well B-2 in preparation to convert this monitoring well into an additional recovery well that would control the chromium contaminated groundwater from migrating off-site from the northern section of the surface impoundment area.

No residential wells have been identified within a ½-mile radius of the American Nickeloid plant. The closest public water supply well is located approximately 900 feet south of the American Nickeloid's southernmost property boundary and is operated by the Walnutport Water Authority (WWA). Each quarter that this well is operated, American Nickeloid is required to collect a sample for total chromium analysis. To date, chromium has not been detected in the WWA's well water. A study by a consultant for American Nickeloid conducted in 1991 concluded that the local geology would not allow the WWA well to be impacted by on-site contamination. The well, which was drilled to a depth of 325 feet, would have to be over 2,000 feet deep to possibly be impacted by on-site contamination, according to the consultant.

Soil (Surface):

The only contaminants detected in surface soils at the facility in excess of EPA's RBCs for residential soils were chromium in both the surface impoundment area and swale area within the wooded area south of the impoundments, and chromium, dibenzo(a,h)anthracene and benzo(a)anthracene in the drum storage area. None of the concentrations detected for the above contaminants are above EPA's RBCs for industrial soils. The entire site is fenced, prohibiting individuals other than on-site workers from entering any of the areas where surficial soil contamination is above the residential health based standards. American Nickeloid understands that it must ensure its workers are adequately protected during excavation activities in the areas of observed contamination.

Soil (Subsurface):

Chromium has been detected at levels exceeding the residential RBC in the surface impoundment area and at levels exceeding the industrial RBC in soils beneath the chrome plating area within the plant building. The entire site is fenced, prohibiting individuals other than on-site workers from entering these contaminated areas. There are no exposed surface/subsurface soils associated with the contamination underneath the chrome plating area. The area is covered by a concrete floor and facility structures. American Nickeloid understands that it must ensure its workers are adequately protected during excavation activities in the areas of observed contamination.

Sediment:

The concentrations of chromium, copper and nickel found in sediment samples collected from the Lehigh Canal as part of the Phase II RFI were all greater than OSWER's sediment screening values for those constituents. Fishing does take place in both the Lehigh River and Lehigh Canal, although it was reported in the Phase II RFI that the fish population in the canal is sparse. The canal is, however, stocked seasonally with trout and catfish. Only limited boating activity is observed in this area of the Lehigh River due to its shallow depth and swimming is not a common activity in this portion of the river. The Phase II RFI concluded in its Baseline Risk Assessment that the potential risks associated with exposure to sediments in the Lehigh Canal are acceptable under EPA guidelines.

Ref.: **Phase II RCRA Facility Investigation Draft Report for the American Nickeloid Company, Prepared by Environmental Resources Management, Inc., 9/18/91; Administrative Order, USEPA Docket No. RCRA-III-060-CA, April 8, 1993; Quarterly Status Reports Required by EPA's Administrative Order, 1993 through 2002; Final Design for the Corrective Measures Implementation at the American Nickeloid Company, Working Document, prepared by Laurie Shields, American Nickeloid, and Dr. Robert Nelson, Illinois State University, September 1996; Correspondence from Cocciardi and Associates, Inc. to Mr. William Cline, American Nickeloid Company, Excavation of Sump Installation, September 10, 1997; Proposed Corrective Measures Alternative for the Former Naphtha Storage Tank Area at American Nickeloid Company, prepared by Laurie Shields, American Nickeloid, and Dr. Robert Nelson, Illinois State University, November 1998; Comprehensive Groundwater Monitoring Evaluation for American Nickeloid Company, prepared by Lisa Hannigan, PADEP, September 1999; Correspondence from Lisa Hannigan, PADEP to Gary Biolchini, American Nickeloid, Well B-2 Pump Test, September 16, 2002; Supplemental Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway, Draft for Comment, USEPA, 10/23/2001; Vapor Intrusion into Buildings from Groundwater and Soil under PA Act 2 Statewide Health Standard, PADEP, 2/15/2002.**

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):_____

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):_____

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Environmental Indicator (EI) RCRIS code (CA725)

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **American Nickeloid Company** facility, EPA ID # **PAD 00 239 9285**, located at **129 Cherry Street, Walnutport, PA 18088** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) _____ Date 09/27/2002*

(print) Andrew Clibanoff

(title) Remedial Project Manager

Supervisor (signature) _____ Date 09/27/2002*

(print) Paul Gotthold

(title) PA Operations Branch Chief

(EPA Region or State) EPA, Region 3

*** A "Yes" determination for "Current Human Exposures Under Control" was first made on 8/9/95. This updated form was completed on 9/27/02.**

Locations where References may be found:

EPA Region III
Waste and Chemicals Management Division
1650 Arch Street
Philadelphia, PA 19103-2029

Contact telephone and e-mail numbers:

(name) Andrew Clibanoff
(phone #) 215-814-3391
(e-mail) clibanoff.andrew@epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.